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CLAIMS

1   A contact lens having near vision and distance vision portions, said lens being movable on the eye between first and second positions, said positions corresponding with aligning the wearer's vision through said near vision and distance vision portions
5   respectively, said lens being positionally stable on the eye in each of said positions, and requiring a force to be applied to said lens to move between said first and second positions.

2   A contact lens according to claim 1 wherein said lens has a back surface and a front surface, and said back surface has either one or two major back curve zones
10   occupying a major portion of the lens back surface.

3   A contact lens according to claim 2 wherein said major portion/s may collectively comprise at least 50% of the back surface.

4   A contact lens according to claim 3 wherein the peripheral edge of the lens does not form part of said major back curve zones.

15 5   A contact lens according to any one of claims 2 to 4 wherein the back surface is defined by major and minor concave surfaces.

6   A contact lens according to claim 5 wherein the back surface incorporates blending zones to reconcile these concave surfaces.

7   A contact lens according to any one of claims2 to 6 wherein the shape of the
20   back surface conforms to a continuous second derivative.

8   A contact lens according to claim 7 wherein the shape of back surface conforms to an infinitely continuously differentiable function.

9   A contact lens according to claim 2 wherein at least a central part of the back surface of the lens comprises a concave surface or combination of two such surfaces,

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and any two points on any such concave surface may be connected by a straight line that does not pass through the interior of the lens between such points.

10   A contact lens according to claim 9 wherein the concave surfaces will cover the entire back surface of the lens excluding the peripheral edge thereof.

5   11   A contact lens according to claim 5 wherein said surfaces are combined with a narrow blending zone to achieve continuity at their juncture.

12   A contact lens according to any preceding claim wherein said lens is positionally more stable in one position rather than the other, thus requiring a greater force to move from the more stable position to the less stable position than visa versa.

10   13   A contact lens according to any preceding claims wherein the lens is adapted to change in cross sectional shape in moving between said first and second positions.

14   A contact lens according to claim 13 wherein a partial inversion of the lens occurs during said change in cross sectional shape.

15   A method of producing a soft contact lens having near vision and distance vision
15   portions, said method including the steps of:

  defining an approximate first eye shape comprised of a spherical sclera and an ellipsoid cornea;

  rotating the first eye shape in a first direction to define a second eye shape;

  rotating the first eye shape in the opposite direction to define a second eye
20   shape;

  superimposing the second and third shapes to define a fourth eye shape, and

  designing a soft lens having a back surface adapted to fit with said fourth eye shape.

16   A method according to claim 15 wherein said rotation takes place about the centre of the scleral sphere so as to rotate the cornea upwardly in said first direction and downwardly in said second direction, and the distance of rotation away from the horizontal in the first direction and the second direction is approximately half of the

5   required translation distance of the lens.

17   A lens substantially as hereinbefore described with reference to any one of the embodiments shown in the drawings.

18   A method of producing a soft contact lens substantially as hereinbefore described and illustrated.

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